

**DEVELOPMENT PROCESS OF SPIN CASTING MACHINE  
FOR SOUVENIR PRODUCTION**

**THESIS**

Submitted as Partial Fulfill of the Requirements  
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FACULTY OF INDUSTRIAL TECHNOLOGY  
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2009

## STATEMENT OF WORK'S ORIGINALITY

I honestly declare that this thesis which I wrote does not contain the works or parts of the works of other people, except those cited in the quotations and bibliography, as a scientific paper should

Yogyakarta, June, 2009

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**A BACHELOR OF  
INTERNATIONAL INDUSTRIAL ENGINEERING THESIS  
On**

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FOR SOUVENIR PRODUCTION**

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**Dedicated for:**

**My parents**

**My Girl**

**Myself**

A large, faint watermark of the Manchester United crest is centered in the background. The crest features a red shield with a white ship, a red devil (the 'Old Trafford' devil), and a red banner at the bottom with the word 'UNITED'. The word 'MANCHESTER' is written in white on a red banner at the top. The entire crest is surrounded by a grey circular border.

**SIR ALEX FERGUSON:**

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**“The trophy is just two meters away from you. But if you lose, it’s even impossible to touch it.”**

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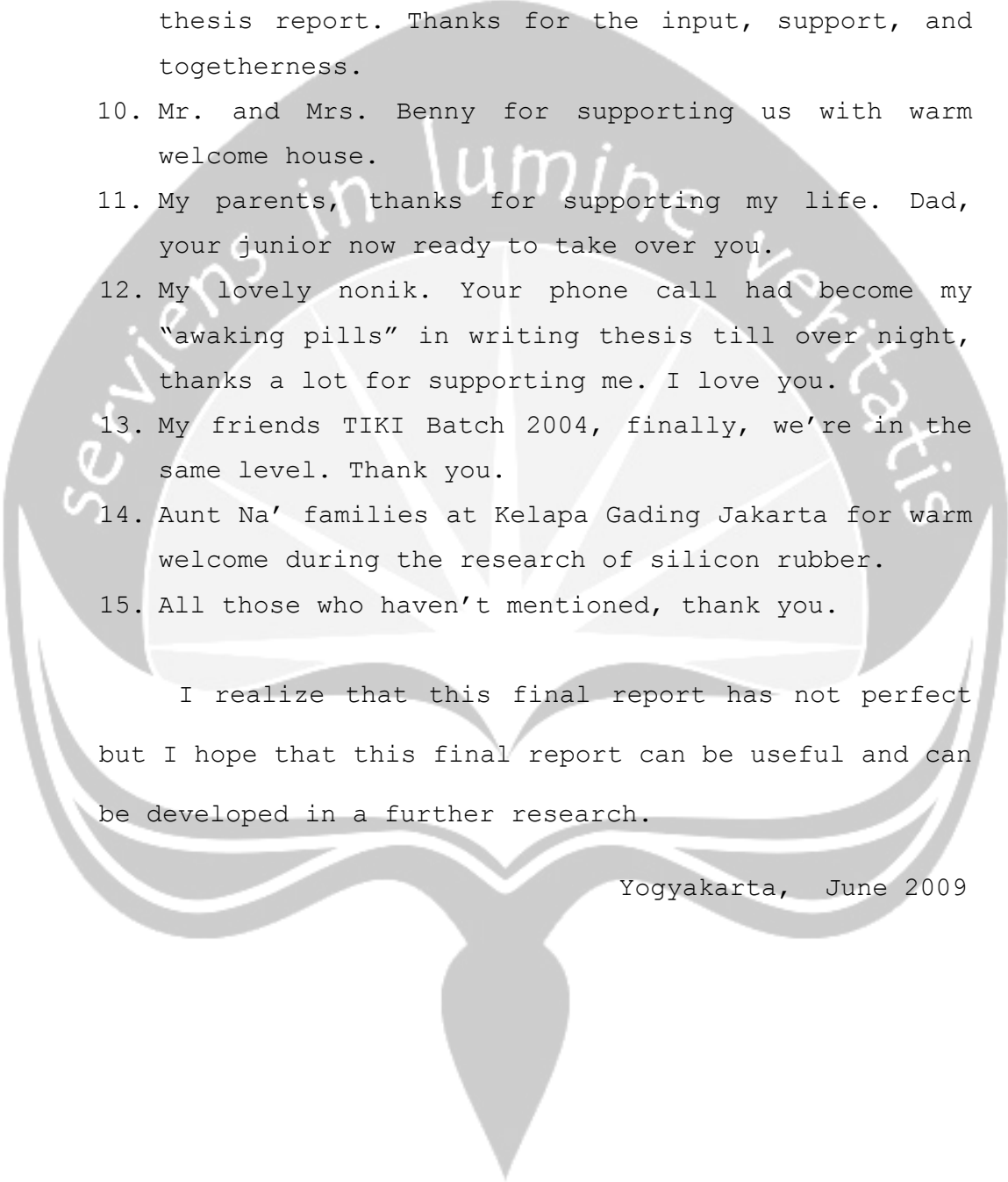
Told at half-time in Champions League Final 1999 Barcelona which pumping the spirit of lads to win over Bayern Munich by 2-1 at injury time.

## FOREWORD

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Appendix 1. Engineering Drawing



## **ABSTRACT**

Universitas Atma Jaya Yogyakarta's present attention to reduce dependency of relying mass production on subcontractor has encouraged the research of application spin casting technology. Spin casting technology has known as rapid tooling technology with some advantages in running mass production and capability in achieving intricate design.

The present spin casting machine was evaluated and redesigned to enhance the reliability of producing good quality of souvenirs made from tin. The evaluation was started by constructing Functional Decomposition Diagram. Afterward, the decomposed part list was classified to its critical function based on Function Analysis. Failure Modes Effects Analysis (FMEA) was performed to evaluate failures of current machine. Those failures were become input for redesign process. Mechanical Design Procedure, Grid Analysis, and Tree Diagram were performed during redesign process. Some defects were found during experimental works of "UAJY" keychain using the new spin casting machine. The Cause and Effect Diagram was performed to find best solution to solve related problems.

By the end of the research, spin casting machine with dimension 500mm x 600mm x 862mm; operating speed at 460 rpm; maximum silicone rubber dimension Ø300mmx40mm ; electricity power 373 W and UAJY keychain product were obtained. The production time is 12,15 minutes and the machine cost is IDR 3,529.6/hour.